GOES-R Proving Ground
CIRA / RAMMB Progress Report

Snowy Rockies NOAA Photo Library by Sean Linehan

09 January 2012

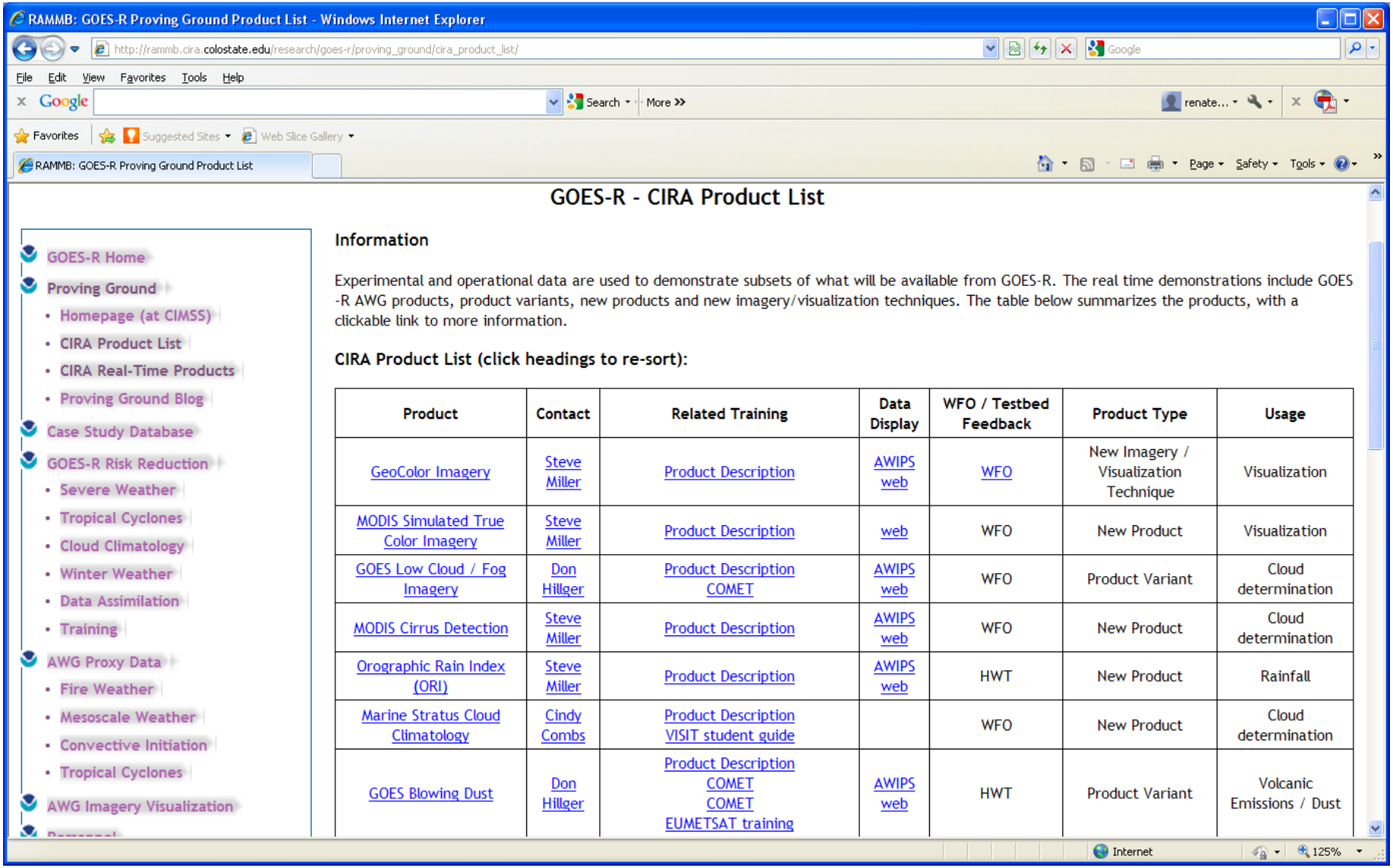
Outline

- User Interactions
- New On-Line CIRA Proving Ground Product Table
- Recent Product Developments
- System Report
- Conferences and Meetings

User Interactions

- WFO Cheyenne and Boulder signed the PG Provider Agreement
- On-going interactions with Alaska region regarding night-time visible products
- Interactions with Pacific Region continues
- Interactions with Air Quality PG team – CIRA is participating in the upcoming 2nd Annual NOAA GOES-R Air Quality Proving Ground (AQPG) workshop
- NHC Proving Ground:
  - 2011 PG ended Nov. 30th
  - Coordinating with M. Brennan and J. Beven for late January conference call to prepare final report
  - Abstract will be submitted for presentation at the Interdepartmental Hurricane Conference
- SWPC Proving Ground:
  - Steve Hill and Chris Lauer visited CIRA Dec 21st
  - Mark provided outline for preparing PG operations plan
  - Steve Hill will coordinate with Bonnie on proposal and ops plan
  - Chris Lauer (formerly of NHC) is coordinating with D. Molenar on AWIPS-II

New CIRA On-Line Product List

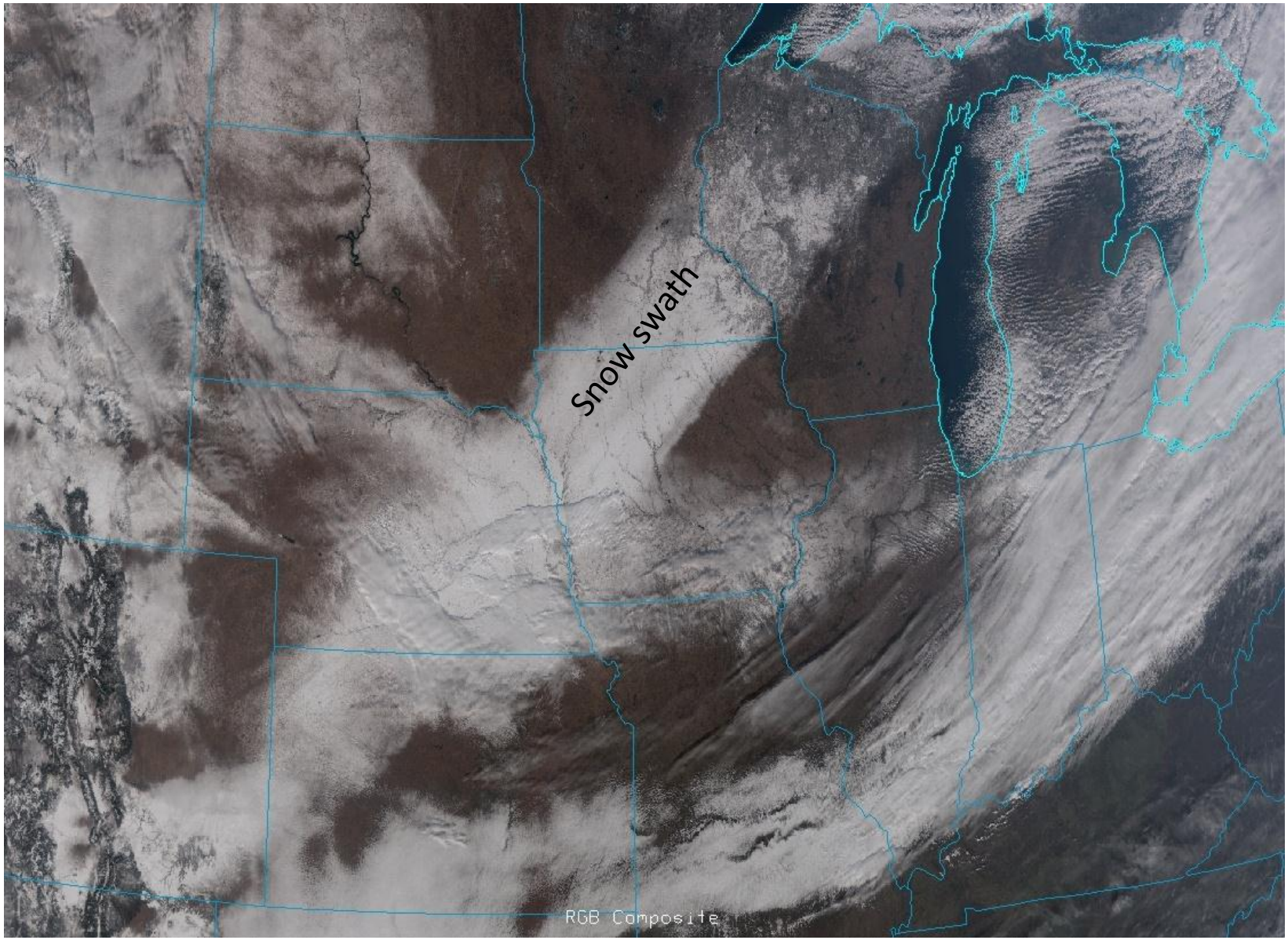


http://rammb.cira.colostate.edu/research/goes-r/proving_ground/cira_product_list/

Recent Product Developments

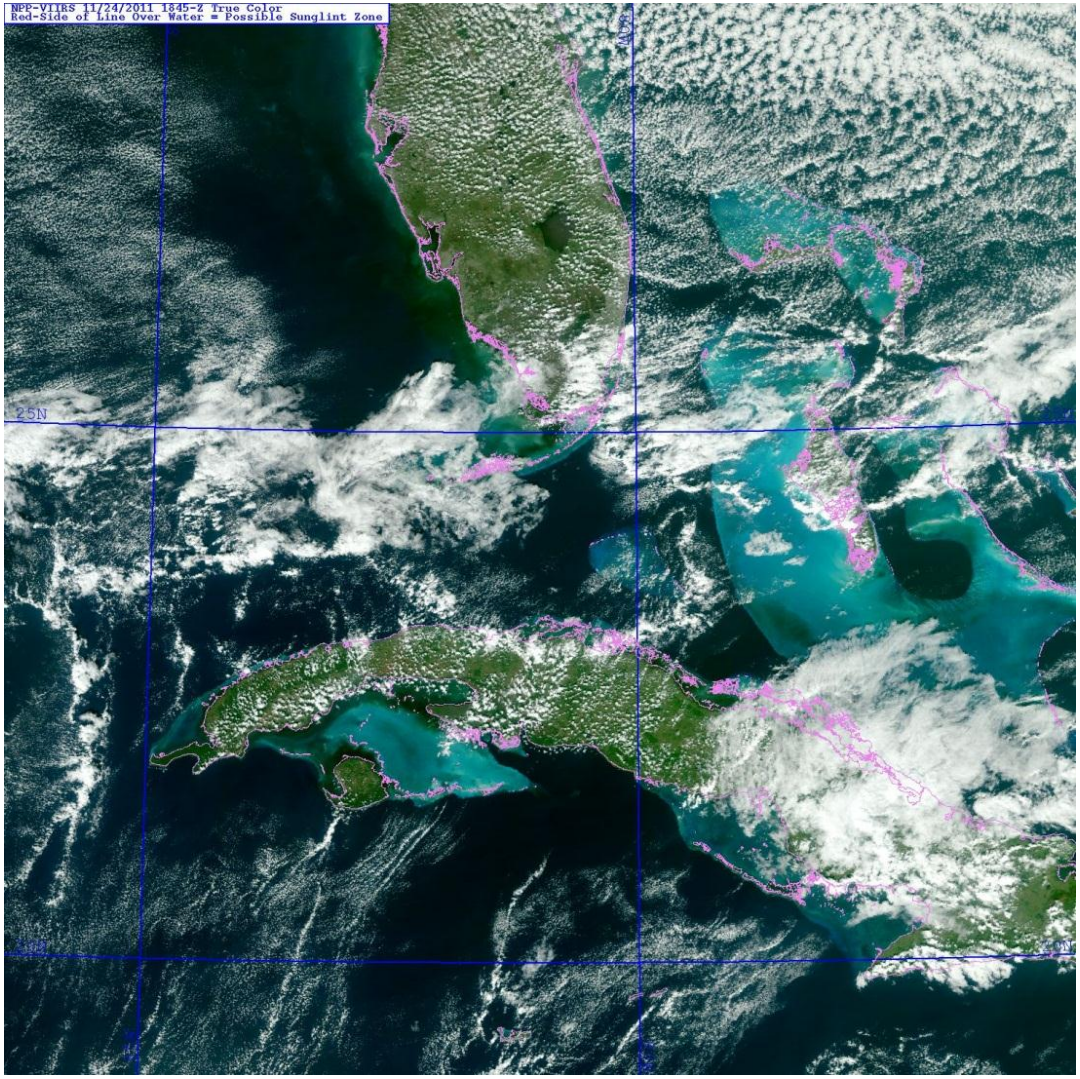
- **NPP VIIRS first-light examples: True color (M-Band)**
- **New products at Boulder WFO:**
  - **Synthetic visible imagery**
  - **Synthetic 10.35-3.9 µm imagery**
    - Useful for highlighting low clouds and fog in the WRF forecast
  - **GeoColor imagery without city lights**
    - Still have version of GeoColor featuring city lights, Low cloud/fog imagery, and Synthetic IR and water vapor imagery for comparison
    - Will show fog/low cloud cases from BOU WFO using this imagery
    - Recent comment in BOU AFD: "GeoColor did a nice job depicting area of stratus/light fog this morning"
- **Snow cover detection examples:**
  - BUF example from 30 Nov saved by forecaster
  - BOU example from 2 Dec
  - BOU example from 13 Dec

True Color Product / VIIRS M-bands



Midwest snow coverage on 9 December 2011

True Color Product / VIIRS M-bands

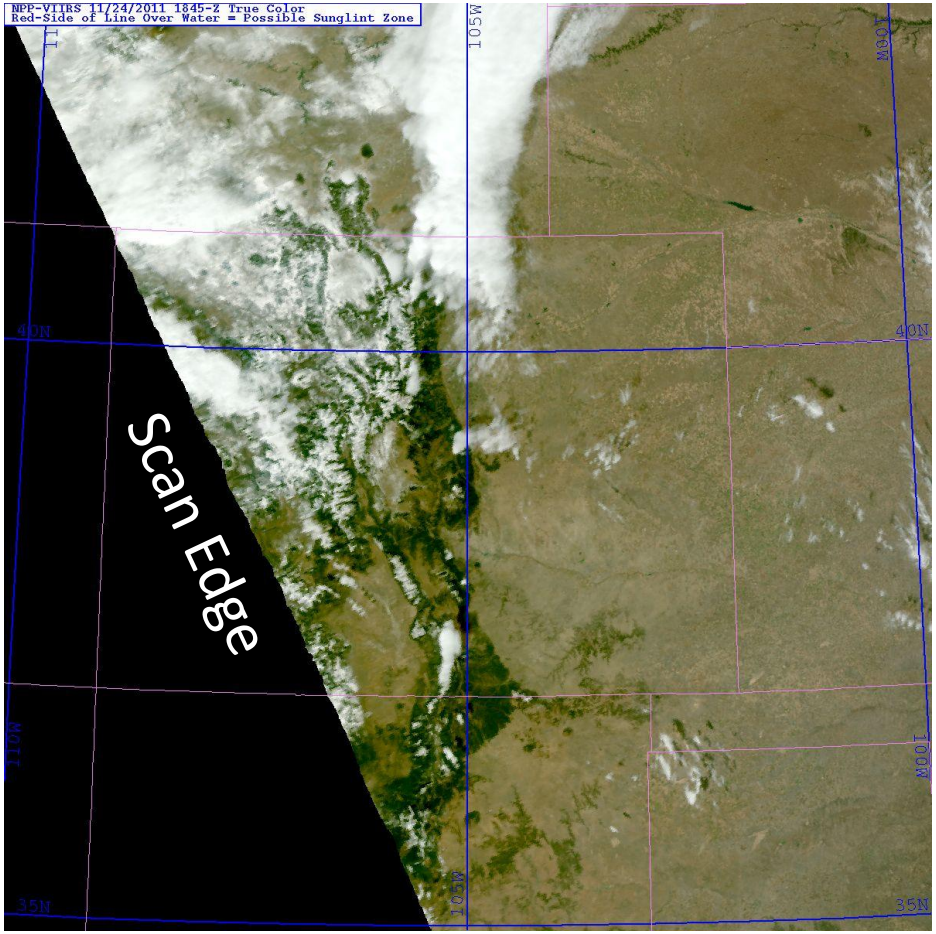


South Florida, Cuba, Bahamas on 24 Nov 2011, 1825 UTC

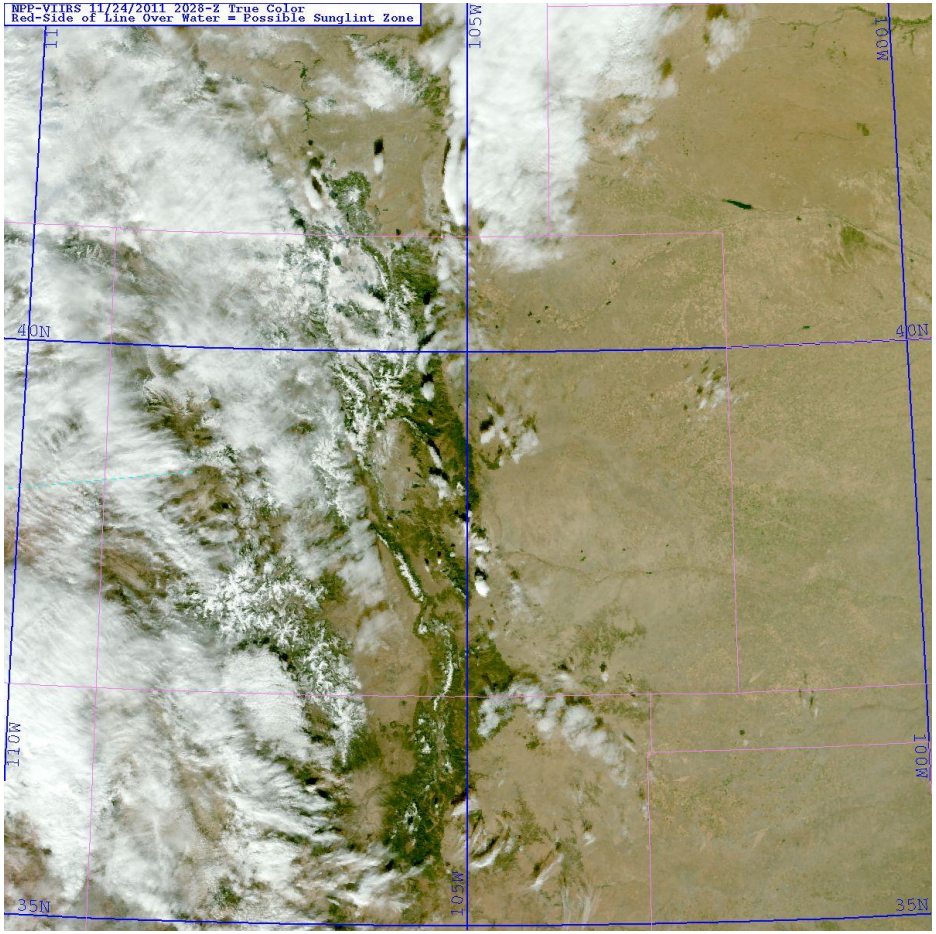
True Color Product / VIIRS M-bands

Colorado

11.24.2011 1845 Z, Near Edge of Scan

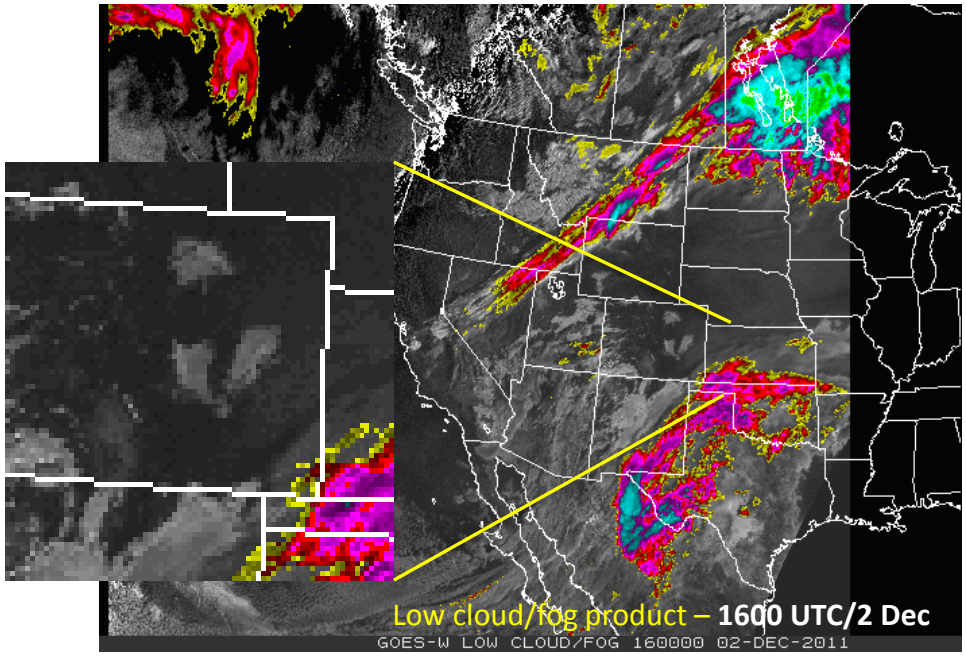


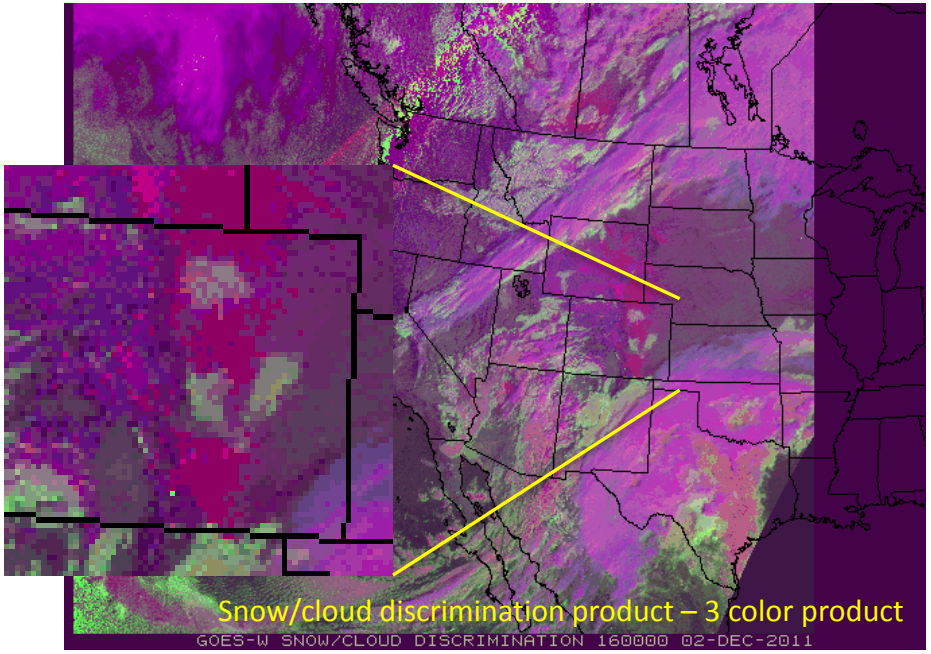
11.24.2011 2028 UTC, Near Nadir

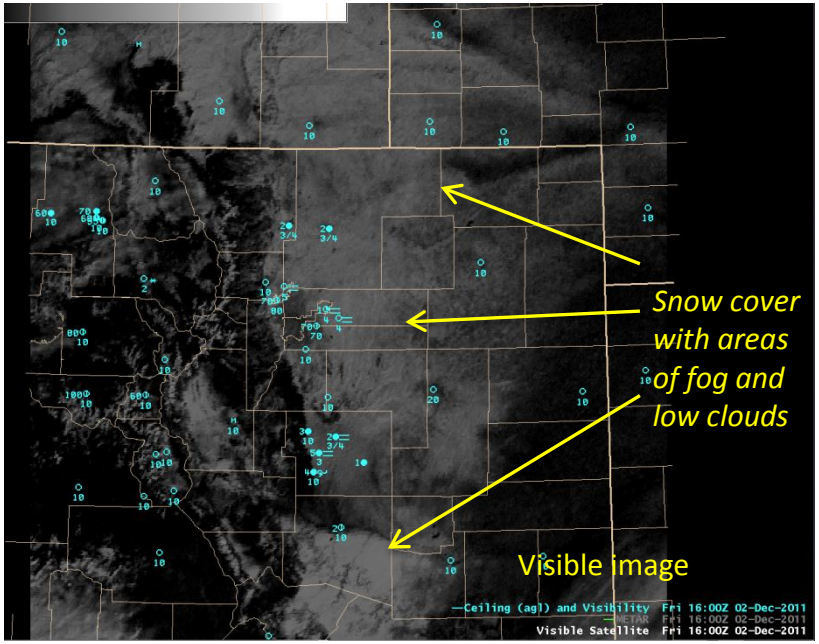


→ VIIRS maintains similar spatial resolution quality at edge of 3000 km swath

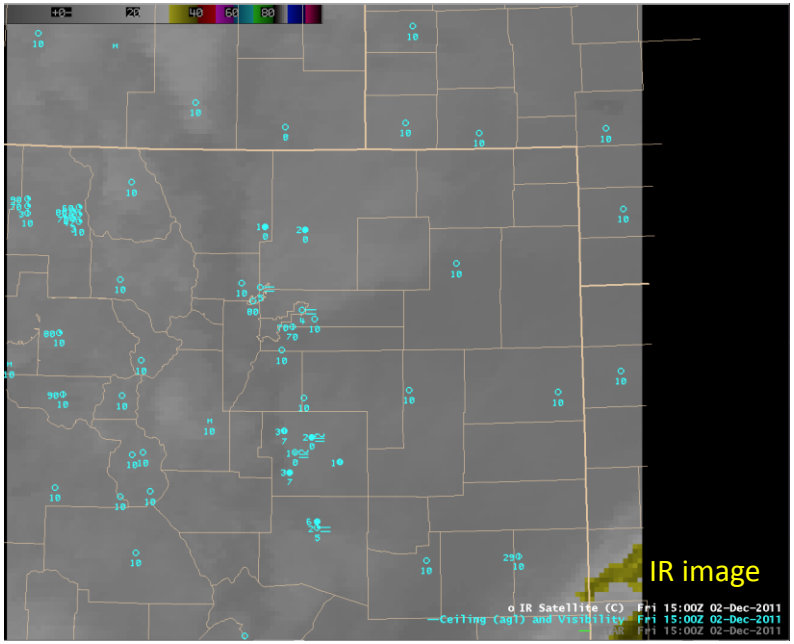
Low Cloud/Fog Over Snow: BOU WFO, 2 Dec 2011



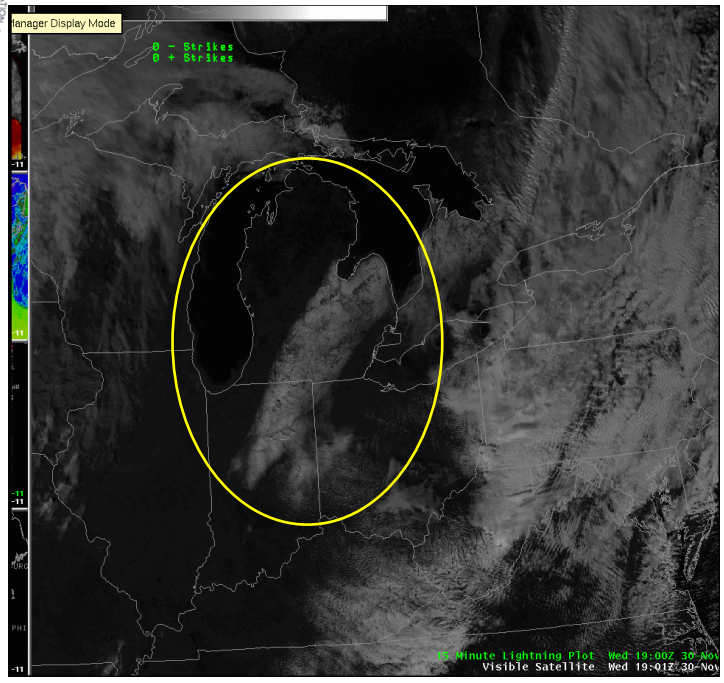


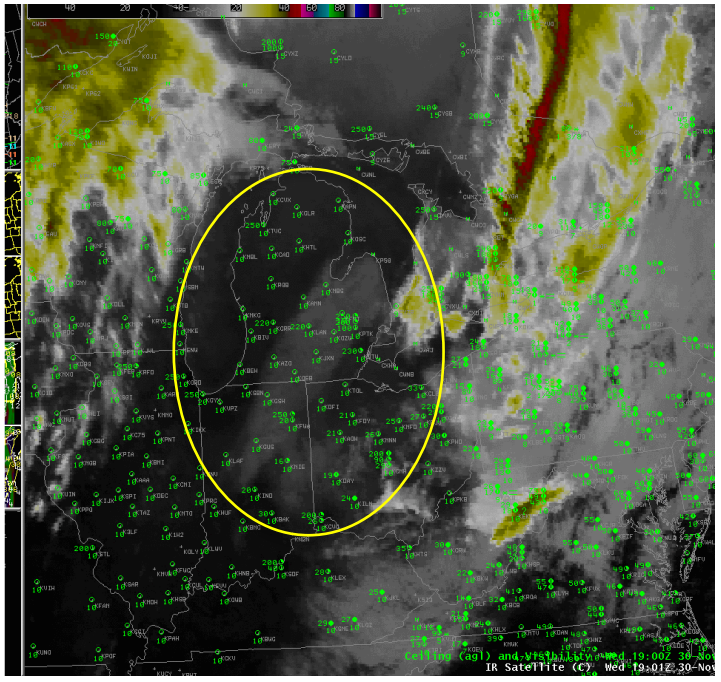


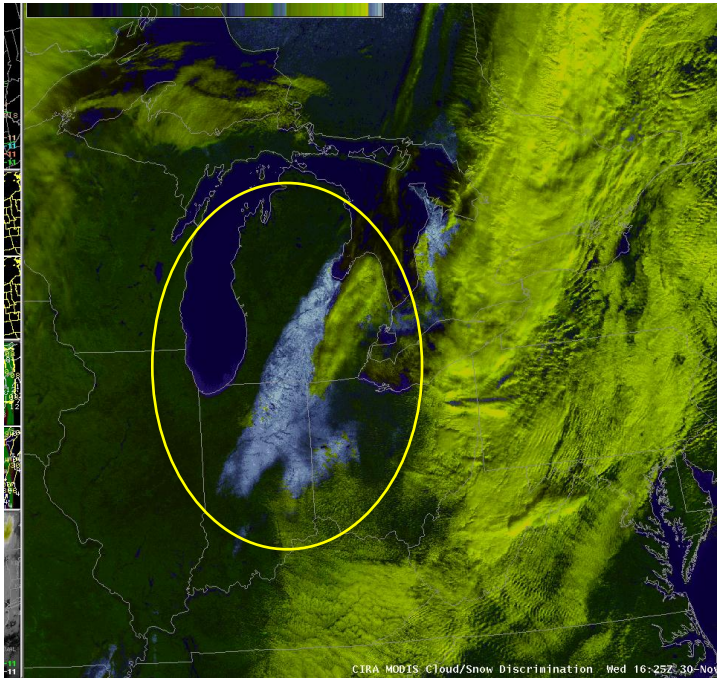
The low cloud/fog product shows the 3 distinct areas of low clouds and fog, while the snow/cloud discriminator product also shows these 3 areas, as well as the snow cover (colored reddish).

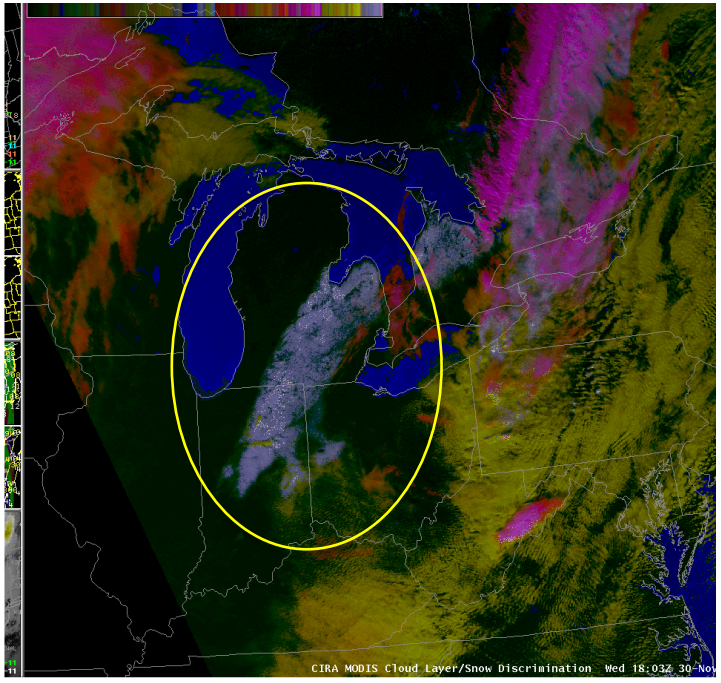


Cloud/Snow Example from BUF WFO







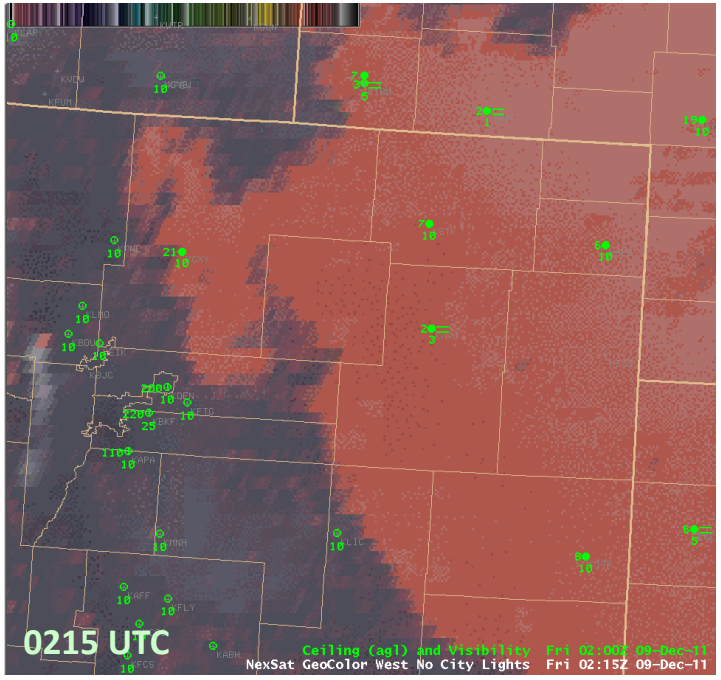


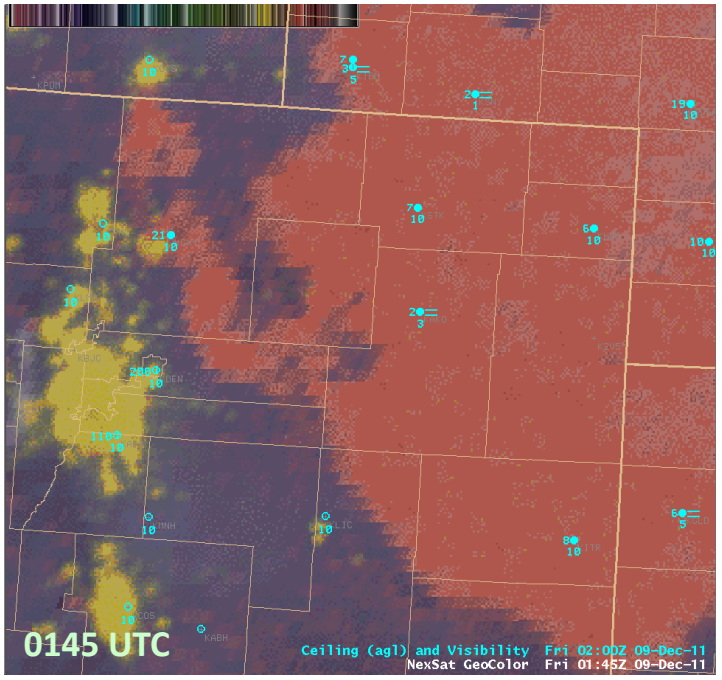
Forwarded from Dave Zaff, BUF SOO, from a forecaster:

"I found it very interesting to see snow cover on the basic IR imagery late this afternoon, so I have attached both the IR and VIS imagery from 19z. 'Sampling' over the snow cover on the IR imagery, I was getting consistent temps of -2 to -3c, and when I moved off the snow cover to the dry land, I was getting readings of +2 to +3c.

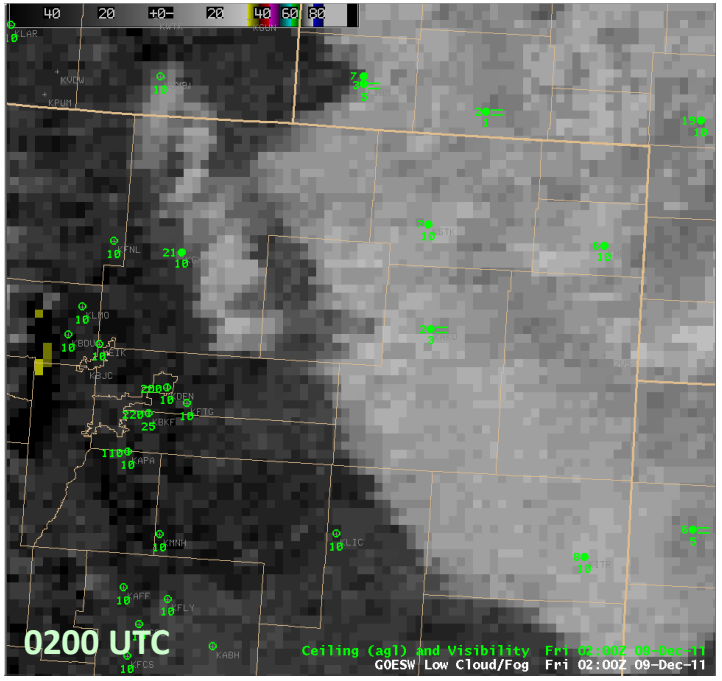
After showing this to another forecaster, he went into the MODIS imagery and noted how well it was shown in both the Cloud/Snow Discriminator image and the Cloud Layer/Snow Discriminator image."

Low Cloud/Fog example from BOU WFO case from AWIPS – 9 Dec

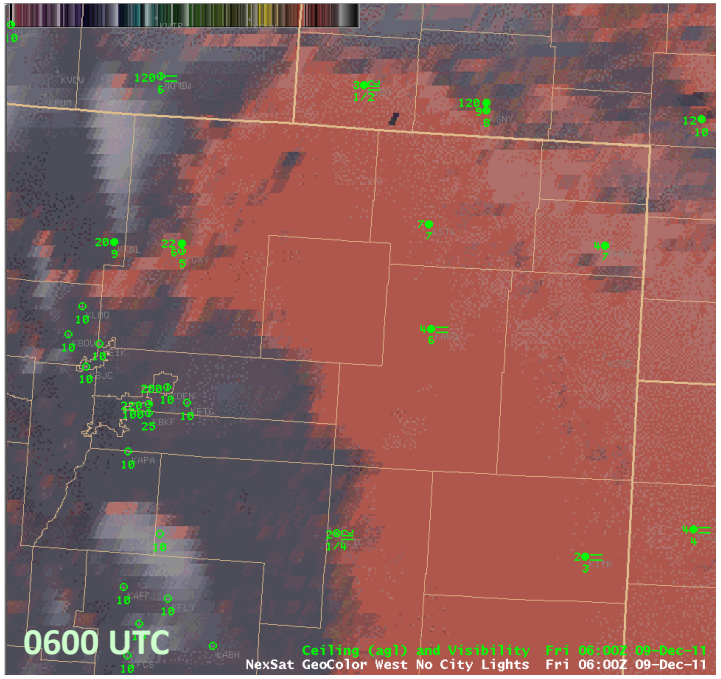


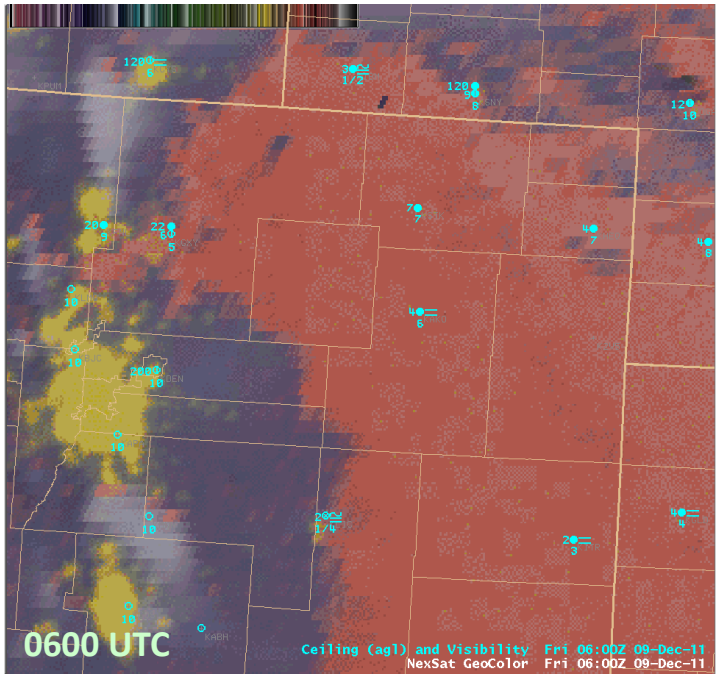


Comparison of GeoColor with and without city lights and the Low cloud/fog imagery for a case of increasing low clouds and fog on the night of 9 Dec. Snow cover was widespread on the plains.

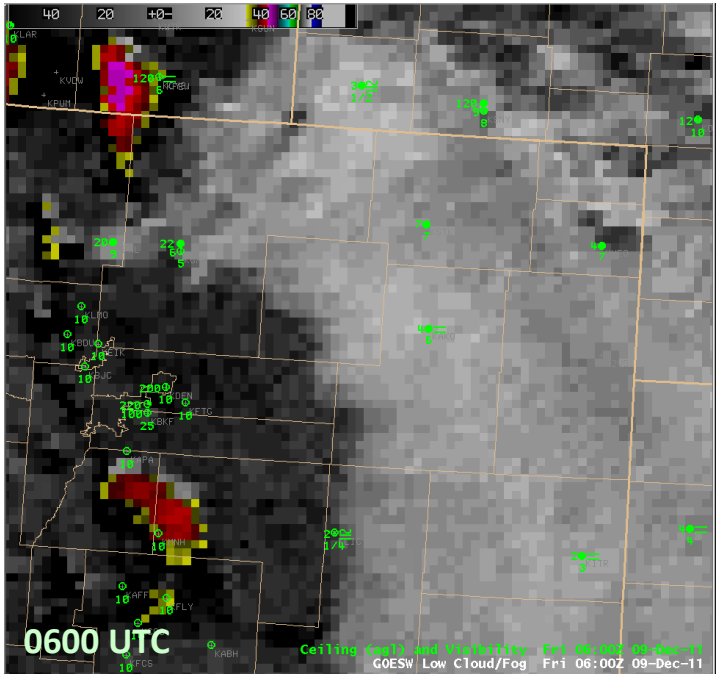


Low Cloud/Fog example from BOU WFO case from AWIPS – 9 Dec

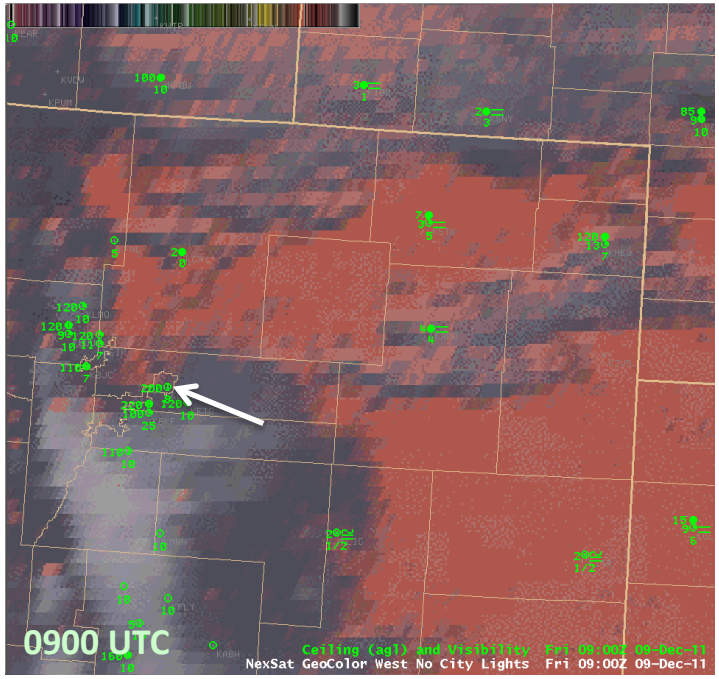


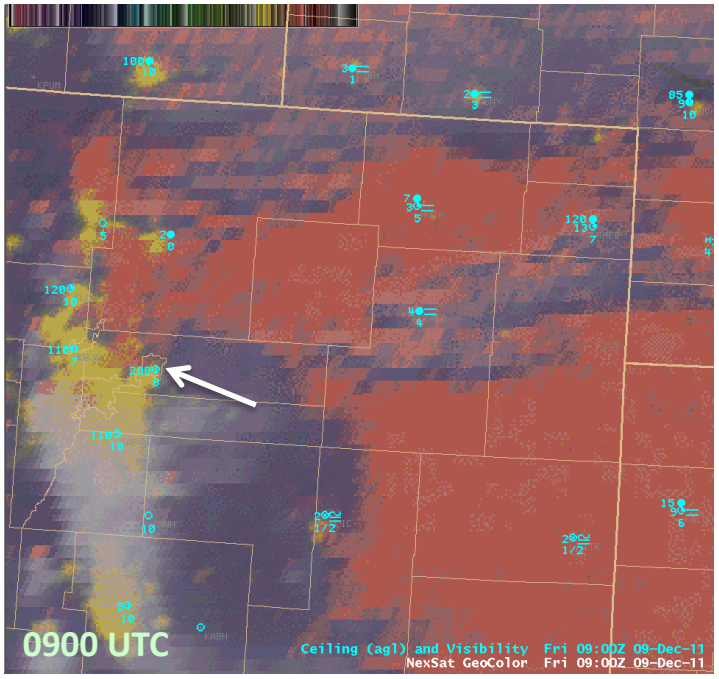


Images are from 0600 UTC.
While the verdict is still out on lights vs. no lights, we have found that at least a few forecasters feel strongly about not having the lights.

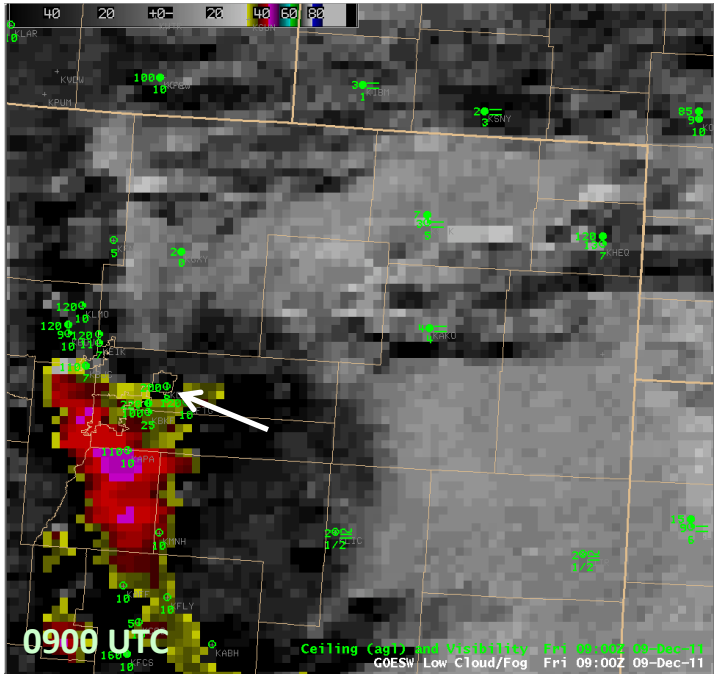


Low Cloud/Fog example from BOU WFO case from AWIPS – 9 Dec

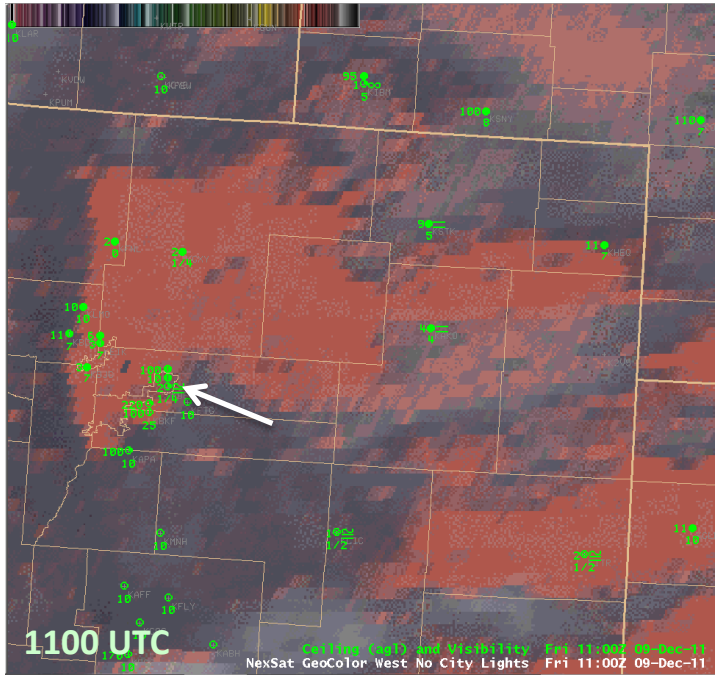


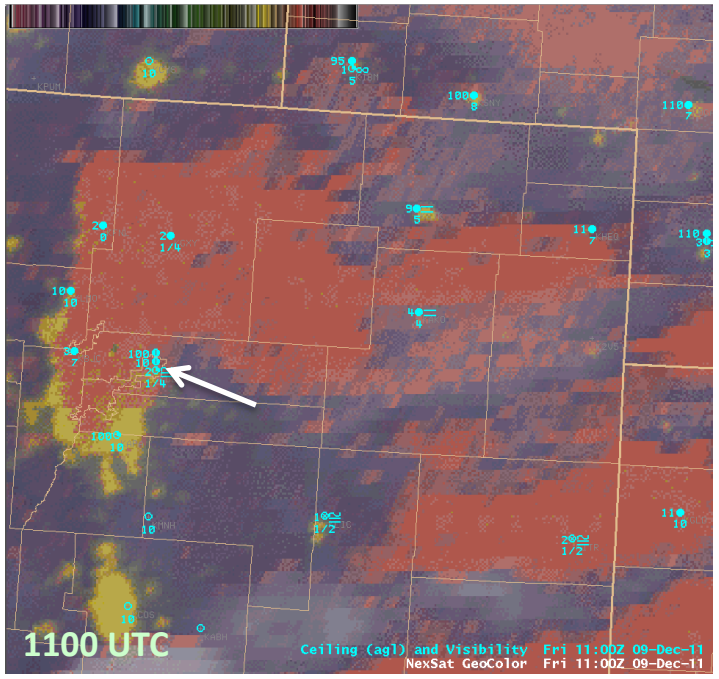


Images are all from 0900 UTC.
The fog and low clouds are making a move on DIA (white arrow). We have had some comments from forecasters liking the very distinct color of the fog/low clouds in the GeoColor imagery. Note how the low cloud/fog imagery colors the higher clouds south of DIA, distinguishing them from lower clouds to the east and north.

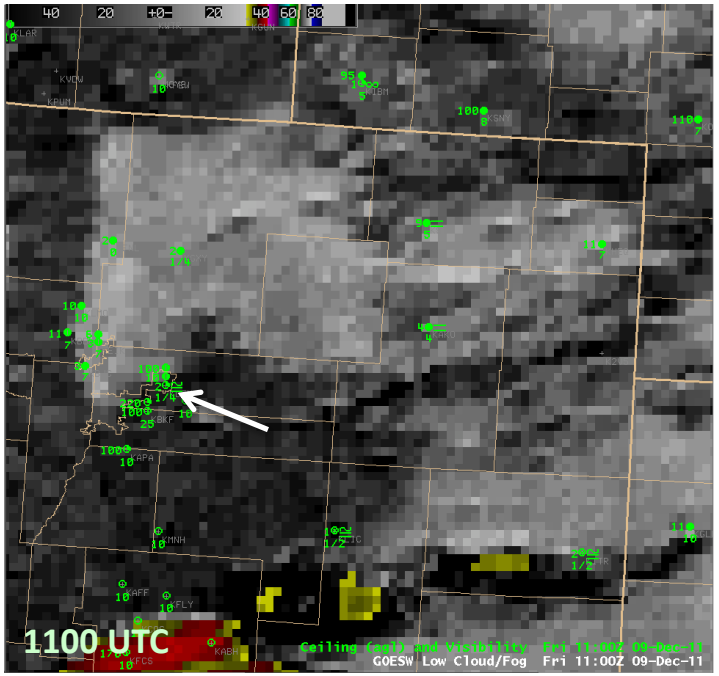


Low Cloud/Fog example from BOU WFO case from AWIPS – 9 Dec





Images are all from 1100 UTC, and DIA is now down to 200 feet ceiling and a quarter mile visibility, at the southern edge of the fog. Note that the pink low clouds obcure the city lights in the Denver metro area and Front Range cities to the north.



System Report 1 of 2:
WFOs Switching to AWIPS II

- **WFO Boulder:**

  AWIPS II now being tested in real-time. They will be trying to put PG products into AWIPS II probably later this winter.

- **WFO Omaha:**

  Now fully using AWIPS II, but PG products are not online yet.

System Report 2 of 2:
AWIPS II Developments at CIRA

Development of an ascii/mcidas to netCDF4 converter:

- We are still gathering info, but it sounds like this will become the eventual standard AWIPS II format.

- Raytheon has been tasked with developing the plug-in for use in getting NPP data into AWIPS.

- We are aiming to have something done by late winter/early spring; plug-in may be ready for use around Aug. 2012.

We are also working with Chris Lauer, who recently moved to BOU to work on Space Weather. His AWIPS II experience will help us create some of the more complex AWIPS color tables (geocolor, RGB) in AWIPS II.

Conference / Meetings

Recent:

- **D. Lindsey attended the NWA Annual Meeting in Birmingham in October and presented a poster on CIRA's Proving Ground Activities; several new offices expressed interest and will soon be new Proving Ground partners, including Austin-San Antonio and Corpus Christy**

- **Chris Siewert / SPC visited CIRA on 1-2 Dec 2011.**

- **Jason Otkin / CIMSS visited CIRA on 5-6 Dec 2011.**

- **Steve Hill and Chris Lauer / SWPC visited CIRA on 21 Dec 2011.**

***Upcoming*:**

- **January 2012: AMS meeting in New Orleans (Mark DeMaria, Don Hillger, Bernie Connell, Steve Miller)**

- **February 2012: NexSat partnering coordination (Steve Miller)**

Thanks!

Questions..?